

and Wisconsin. 27th, Arizona, Colorado, Illinois, Indian Territory, Iowa, Kansas, Louisiana, Maryland, Mississippi, Nebraska, New Jersey, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, Texas, Virginia, and West Virginia. 28th, Arkansas, Colorado, Illinois, Kansas, Kentucky, Missouri, Nebraska, Ohio, and Tennessee. 29th, Alabama, Arkansas, Georgia, Kansas, Kentucky, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Utah. 30th, Alabama, Arkansas, Colorado, Florida, Georgia, Illinois, Indiana, Kansas, Mississippi, Mis-

souri, New Mexico, Oklahoma, Tennessee, and Texas. 31st, Alabama, Indiana, Indian Territory, Kansas, Kentucky, Michigan, Oklahoma, Tennessee, Texas, and West Virginia.

SLEET.

Sleet was reported as follows: 2d, Nevada and Utah. 3d, Montana and North Dakota. 4th, Arizona and Utah. 6th, Nevada. 7th, Nebraska. 13th, Utah. 15th, New York. 20th, Iowa, Nebraska, and North Dakota. 21st, Arkansas and Iowa. 31st, Texas.

WINDS.

The prevailing winds in May, 1892, are shown on Chart II by arrows flying with the wind. In New England, the Ohio Valley and Tennessee, and over the southern and northern plateau regions south to west winds were most frequently noted; in the middle Atlantic states and on the middle Pacific coast they were generally from southwest to northwest; in the south Atlantic and east Gulf states and the lower lake region, from southeast to southwest; over the Florida Peninsula and in the west Gulf states, from east to south; in the middle and lower Missouri valleys, from northwest to north; on the middle-eastern slope of the Rocky Mountains, from northwest to northeast; on the southeast slope of the Rocky Mountains, from southeast to south; on the north Pacific coast, from west to north; on the south Pacific coast, westerly; in the Red River of the North Valley, northerly; and in the upper lake region, the upper Mississippi valley, and on the middle-eastern slope of the Rocky Mountains, variable.

HIGH WINDS.

[In miles per hour.]

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows: 3d, 60, sw., at Chicago, Ill. 4th, 60, s., at Amarillo, Tex. 6th, 54, e., at Abilene, Tex. 8th, 66, sw., at Abilene, Tex. 10th, 56, s., at Fort Canby, Wash. 15th, 50, sw., at Keeler, Cal. 16th, 66, s., at Fort Canby, Wash. 18th, 56, nw., at Huron, S. Dak.; 50, se., at Sault de Ste. Marie, Mich. 19th, 52, e., at Block Island, R. I.; 51, nw., at North Platte, Nebr. 20th, 58, e., at Block Island, R. I.; 52, nw., at Valentine, Nebr. 24th, 56, n., at Amarillo, Tex. 27th, 54, se., at Huron, S. Dak.; 53, nw., at Kitty Hawk, N. C.; 52, nw., at Norfolk, Va.

LOCAL STORMS.

1st.—High winds prevailed in Kansas, heavy rain fell in Nebraska and South Dakota, and destructive thunder, rain, and hail storms occurred in Iowa, Missouri, Illinois, Indiana, and northern Ohio. Roofs were damaged by high wind at Cunningham, Kans., several buildings were blown down at Burns, Kans., an exceptionally heavy rainstorm was reported at Beatrice, Nebr., and a severe hailstorm visited Sioux Falls, S. Dak. In the middle Mississippi and lower Ohio valleys heavy rain injured crops and washed out railroads. At Withers Mill, Mo., wheat and fruit were damaged by a hailstorm. At Cleveland, Ohio, heavy rain in the afternoon flooded streets and cellars.

2d.—Destructive storms occurred from Texas to Indiana. Exceptionally heavy rain and hail storms were reported in northeastern Texas. Between 7 and 8 p. m. a peculiar formation of clouds was observed near Kingfisher, Okla. The cloud seemed to gyrate for a few minutes and then suddenly lowered a long arm curved somewhat like the letter "S." The forward movement was slow and steady, and the column broke several times only to form again. Previous to the formation of this tornado, an ordinary thunderstorm approached from the south, attended by heavy hail. The tornado moved northeast in a path about 100 feet in width and changed direction to southwest several times. Buildings in its path were scattered in all directions, trees were twisted off, balls of fire were observed,

and one person was killed. A tornado moving northeast passed near Orlando, Okla., at 2.30 p. m., in a path 80 to 100 feet in width, with rain, heavy hail, thunder, and lightning. Articles were thrown west from the center, several persons were injured, and the damage by wind and hail was placed at \$4,000. Another whirl which did not reach the earth hovered in the air about 15 minutes.

About 7 p. m. a storm passed over the northwestern part of Chautauqua county, Kans., destroying a number of buildings, killing one person, and injuring several. At Topeka, Kans., a heavy thunderstorm from the southwest began in the late afternoon. From 5.03 to 7.10 p. m. 2.12 inches of rain fell. Bottoms in the south part of the city were flooded. Much damage to property and some loss of life were reported near Topeka. At 7.30 p. m. a severe thunderstorm from the southwest visited Kansas City, Mo. Destructive storms were reported at various points in western Missouri. At Davenport, Iowa, a thunderstorm began 10.20 p. m. and continued until the early morning of the 3d. The heavy rains caused great damage to railroad property and interrupted traffic about Davenport. Thunder and hail storms occurred in central and northern Illinois. Near Rantoul, Ill., a barn was struck by lightning and 5 horses were killed. Lightning killed one person and injured another near Lincoln, Ill. Heavy rain fell in central and northern Indiana, and severe storms were reported in West Virginia.

3d.—Local storms occurred from Arkansas and Missouri over the Ohio Valley, and in Pennsylvania and New York. A heavy hailstorm was reported at Fayetteville, Ark., in the afternoon. Very heavy rain fell from eastern Kansas to Illinois. At Chicago, Ill., the wind reached a velocity of 60 miles per hour from the southwest. Three persons were reported killed by lightning near Hardinton, Ind. At Springfield, Ohio, 2 persons were killed and several were injured by lightning. At Ithaca, N. Y., a heavy thunderstorm from the west, with high westerly winds and rain, prevailed from 6 to 6.38 p. m. A barn was struck by lightning and burned, and lightning struck several barns east of Ithaca. Considerable damage was caused by lightning at other points in western New York. Heavy rain, with thunder and lightning, occurred throughout the Allegheny and Monongahela valleys, Pennsylvania, in the early afternoon, causing considerable damage to property. Heavy thunder and wind storms were reported in central and north-central Pennsylvania.

4th.—Heavy rain fell from eastern Kansas over Missouri, Iowa, and Illinois, and local storms were reported in the Ohio Valley and Tennessee, and in Massachusetts. At Topeka, Kans., the rainfall was very heavy, 2.00 inches fell from 10 a. m. to noon, and many houses in the south part of the city were washed from their foundations. A large number of washouts were reported and a number of bridges were carried away near Leavenworth, Kans. In Concordia, Kans., a stone house was struck by lightning and badly damaged. Rivers and streams in northern Missouri, Iowa, and Illinois were flooded by heavy rain, inundating low-lying districts, and causing great damage to property in towns and country. Marietta, Ohio, was visited by a destructive wind, rain, and thunder storm in the after-

noon. A heavy rain and hail storm washed out fields about Lynnville, Tenn. A house near Bedford, Mass., was struck by lightning.

5th.—Eastern Iowa and western Illinois were visited by exceptionally heavy rainstorms, attended in places by severe local storms. About Davenport, Iowa, streams overflowed, flooding lowlands and causing washouts on railroads. During a thunderstorm in the evening at Dubuque, Iowa, a house was struck by lightning and one person was killed. A heavy thunderstorm, with hail, moved southeast over Braidwood, Ill., in the early morning, causing damage to the extent of about \$3,000. A destructive storm was reported in the north part of Wabash county, Ind., in the evening. Destructive rain and local storms were reported in southern Indiana and central Kentucky.

6th.—Severe local storms occurred in the District of Columbia, Maryland, Pennsylvania, West Virginia, and Texas. At Washington, D. C., a thunderstorm began 4.10 p. m., and the wind reached a velocity of 42 miles per hour. The temperature fell from 88° to 72°. Destructive wind, rain, and hail storms were reported in central and northern Maryland and in southeastern Pennsylvania. At 3.15 p. m. a storm moved southeast by east over Gettysburg, Pa., unroofing two buildings. During a thunderstorm at Elkhorn, W. Va., the wind reached a velocity of 80 miles per hour, prostrating trees, etc. At Abilene, Tex., heavy rain, with thunder and lightning, occurred at intervals during the day. In the evening the wind reached a velocity of 54 miles per hour from the east. A hailstorm caused considerable damage in the morning 14 miles southeast of Abilene. Destructive rain and local storms were reported throughout central Texas.

8th.—Destructive storms occurred from Texas to Missouri. At Abilene, Tex., an exceptionally severe thunder, wind, and rain storm prevailed from midnight to 10 a. m. The wind reached a velocity of 66 miles per hour from the southwest at 1.45 a. m., the temperature fell from 83° to 54° between 2 a. m. and 8 a. m., and streams were running bank full as the result of the heavy rain. At 6 p. m. a destructive storm passed about one mile west of Morrilton, Ark., destroying property to the estimated value of \$10,000 to \$12,000.

9th.—Local storms were reported in Arkansas, southern Missouri, and western Tennessee. A destructive storm from the northwest passed over the southern part of Lee county, Ark., about noon. Seven persons were injured, several barns and outhouses were blown down, and many trees were torn up by the roots. About 5 a. m. a storm caused minor damage at Cassville, Mo. At Jackson, and near Collierville, Tenn., considerable damage was caused by thunder and wind storms.

10th.—Heavy wind, rain, and hail storms occurred in eastern Ohio. Buildings were damaged, trees were uprooted, and exceptionally heavy rainfall flooded low-lying sections. In Mercer county, Ohio, a number of buildings were struck by lightning and burned.

11th.—Heavy thunder and hail storms visited the District of Columbia and west-central Maryland. At Washington, D. C., a thunderstorm from the west began at 2 p. m., with heavy hail in the northern part of the city. At College Park, Md., heavy, threatening clouds appeared in the west and moved south of east. At 2 p. m. a strong gust of wind, with large drops of rain, was quickly followed by high winds and heavy rain. At 2.05 p. m. hail began and continued 9 minutes. The hail was followed by copious rain and wind diminishing in force. Glass in north and west sides of buildings was badly broken. None of the hailstones were less than one-half inch, and many were one and one-half inch in diameter. Most of the stones were nearly perfect spheres, clear and very hard; some were white and opaque. In many cases the form was a double convex lens, the lesser diameter being at least one-half the greater. In the larger stones the structure by concentric rings or spheres was plainly seen. This band of hail was about 5 miles in width. The storm was also severe at other points in western Maryland.

12th.—Tornadoes were reported in the afternoon in Oklahoma Territory. A report from Gate City, Okla., states that the afternoon had been very warm, with fresh west wind. Heavy cumulo-stratus clouds appeared in the southwest. In the south a cloud with sharply-defined lower border had formed, from which rain was falling, the under side of the mass being a deep blue-black. At 5.35 p. m. a column of the same color as the cloud mass extended to the horizon at an angle of about 45° to the plane of the cloud. A revolving motion and a serpentine vibration were observable. The gyrations rapidly increased in velocity, and at 5.39 p. m. the lower part of the column suddenly disappeared, and the remaining portion was quickly drawn up to the cloud mass. The earlier part of this storm consisted of a cloudburst, with a heavy fall of hail, on the divide between the Beaver and Kiowa rivers. The tornado first made its appearance nearly south of Gate City, where it dug up sand hills and destroyed a small clump of timber.

About 20 miles south of Mangum, Okla., 5 persons were killed, and about 20 buildings were destroyed by a tornado. A severe thunderstorm from the northwest passed over Oklahoma City between 9.30 and 11 p. m. During the height of the storm a violent whirl of small dimensions formed in the south part of the city, overturning barns and outhouses. The path of the whirlwind was about 15 feet in width. A heavy thunderstorm, with high wind and excessive rain, visited Excelsior Springs, Mo., between 9.30 and 11.30 p. m. Streams overflowed, carrying away small buildings and bridges and damaging crops on lowlands. A severe thunder and hail storm was reported at Sedalia, Mo., at night.

13th.—Local storms occurred from Kansas and Texas to southern Illinois. A tornado visited Eureka, Kans., about 5.30 p. m. The clouds had been black for several hours, and rain had fallen nearly all day. The funnel-shaped cloud was distinct in form and color, and upon first touching the ground tore up trees and hedges. It then veered to a northeast course and destroyed a barn; a dwelling close to the barn was uninjured. Several large trees were twisted from the ground. A house, with its contents, was next scattered far and near, and the ground for one-fourth mile along the storm's track was littered with debris. Fruit trees were carried off. The water was sucked out of a well. A new, strong wagon was carried one-fourth mile. Another house was smashed flat, all of the materials remaining on the site. The edges of the path of destruction were clean cut.

At Climax, Kans., a funnel-shaped cloud moved east about 6.50 p. m. The path of destruction was about 150 feet in width, and the property destroyed was valued at about \$1,500. A tornado visited the south part of Augusta, Kans., about 5 p. m., demolishing 15 buildings and injuring several persons. A tornado was reported near Mulvane, Kans. At 6.55 p. m. a whirling storm was distinctly seen about 2 miles east of Wichita, Kans. At Centerville, Mo., a thunderstorm ended 6 a. m. A second thunderstorm began 4.30 p. m. and continued during the night. The heavy rainfall flooded the Black River, causing damage on lowlands. A thunderstorm occurred at Springfield, Mo., in the morning. Heavy rainstorms caused considerable damage in northwestern Arkansas and in parts of Oklahoma Territory. A severe thunderstorm prevailed at Nashville, Tenn., from 10.50 a. m. to 1.30 p. m. Lightning struck in 3 places, and telephone connections were burned out. A heavy thunderstorm prevailed at Cairo, Ill., from 6.40 to 11.48 p. m. The storm advanced from the southwest, and for 2 minutes the wind reached a velocity of 60 miles per hour.

14th.—Local storms were reported from Texas to Missouri, and in Ohio and Pennsylvania. A destructive storm was reported near Aaron, Okla. Several persons were killed or injured, and a number of buildings were destroyed. Severe thunderstorms occurred in northern Texas and Oklahoma and Indian territories. Stock was reported killed by lightning near Lehigh, Ind. T., during a thunder and hail storm. A wind and hail storm of short duration caused damage about Cawker City, Kans., in the morning. At Clinton, Mo., a

thunder and hail storm damaged fruit and gardens. Northern Ohio was visited by an unusually heavy rainstorm. A heavy rain and thunder storm passed over York, Pa., at night.

15th.—Destructive storms occurred in Ohio, West Virginia, and Pennsylvania. Local storms were also reported in Texas. A violent wind and rain storm was reported in Scioto county, Ohio. During a thunderstorm at Cincinnati, Ohio, trees were blown down on Walnut Hills. A thunderstorm was traced from Brown and Butler counties, in southwestern Ohio, northeastward over Mahoning county, the average rate of advance being 20 miles per hour. In its advance the storm is reported to have assumed a "horseshoe" shape, after which it contracted and lost energy. The damage noted, which was of a minor character, occurred in the southern half of the storm. A heavy thunder and rain storm occurred about noon at Wheeling, W. Va. At Corry, Pa., a windstorm caused damage in a path about 30 feet in width. The damage was confined to tops of buildings and trees, 12 to 16 feet above the ground. A violent wind and rain storm was reported about Harrisburg, Pa. A storm moved northeast over the southern part of Delta county, Tex., at night, causing destruction in a path about 300 yards in width. Destructive thunderstorms also visited Richardson and Ennis, Tex.

16th.—Local storms were reported from South Dakota to Texas, and in Iowa and Missouri. About Huron, S. Dak., heavy rain flooded cellars and caused a suspension of farm work. At 1.50 p. m. a thunder and hail storm moved north near Allison, Kans. At 2.31 p. m. a tornado cloud appeared west of Allison. The cloud extended to the earth and moved northward, with heavy rain and hail. Lightning struck a schoolhouse 5 miles southwest of Gove City, Kans. The severest thunderstorm experienced in several years occurred at Concordia, Kans., in the evening. Streets and cellars were flooded, bridges were washed away, and washouts occurred on railroads. The river rose rapidly and flooded lowlands. Lightning struck and damaged a house. At Oklahoma City a thunderstorm began 9 p. m. and continued during the night. Heavy rain flooded the lower part of the city. Exceptionally heavy rain was reported at Hartington, Nebr. At Mount Carmel, Iowa, a church was struck by lightning and burned. A rain and hail storm passed over Clinton, Mo., at 3 p. m., causing great damage to glass, fruit, etc. A destructive hailstorm was reported at Thomaston, Ga.

17th.—Local storms occurred in Iowa, Missouri, Illinois, Kentucky, Ohio, Minnesota, and North Carolina. At Sioux City, Iowa, damage was caused by heavy rain. One person was reported killed by lightning at Wapello, Iowa. A storm caused damage of a minor character at Mansfield, Mo. One person was killed by lightning at Stillwell, Ill. A violent thunder and wind storm visited Louisville, Ky., at 2 p. m., causing damage to roofs, trees, etc. Some damage was caused by lightning in Cincinnati, Ohio. A man was killed by lightning near Morris, Minn. Two horses were killed, and one person was stunned by lightning near Kinston, N. C.

18th.—Heavy windstorms prevailed over South Dakota, Kansas, Iowa, and Missouri, and local storms were reported in Wisconsin, Lower Michigan, Ohio, and Pennsylvania. At Pierre, S. Dak., the pontoon bridge across the west channel of the Missouri River was blown from its moorings. At Huron, S. Dak., the wind reached a velocity of 56 miles per hour from the northwest. At Leavenworth, Kans., an extreme velocity of 52 miles per hour was reached at 5.40 p. m. A severe northwest wind prevailed at Lebo, Kans., in the morning. The edges of leaves on the tops and northwest sides of apple trees, and tender garden vegetables, were blackened as though scorched by fire. At Alta, Iowa, light buildings were blown down, and heavy rain flooded cellars and caused washouts on railroads. A severe storm visited the region about Chattanooga, Tenn., in the afternoon. Electric wires were rendered useless by wind and lightning, trees were blown down, and houses on Lookout Mountain were unroofed. Heavy northwest winds caused damage about Mansfield,

Springfield, and Platte River, Mo. Streams and fields were flooded by heavy rain at Harvey, Wis. Lightning struck a building and stunned several persons at Detroit, Mich. A destructive storm was reported near Miamitown, Ohio, in the afternoon. A heavy thunderstorm was reported at Wilkes Barre, Pa.

19th.—Snow fell at night in the mountains of northwestern Massachusetts. Two buildings were struck by lightning in the evening at Dallastown Pa. A heavy windstorm prevailed from 2 to 4 p. m. at Olney, Ill. High north winds, with heavy rain changing at intervals to snow, prevailed at Duluth, Minn. The damage by wind to buildings was estimated at \$3,000. Snow and heavy rain fell in northern Wisconsin.

20th.—Snow fell in New Hampshire, Vermont, western Massachusetts, western Connecticut, and northeastern New York. High wind, with snow and sleet, continued during the early morning and the day at Grafton, N. Dak. At Yates Center, Kans., a house was struck by lightning.

21st.—Severe local storms occurred in Virginia and North Carolina. Three men were killed and 2 were injured by lightning near Everetts, Va. A heavy hailstorm visited the region about Norfolk and Portsmouth, Va. A hailstorm was reported in the northern part of Halifax county, N. C. A thunderstorm caused damage in the east part of Wilson, N. C. Severe thunder and wind storms were noted in other parts of eastern North Carolina.

22d.—A destructive hailstorm was reported at Branchville, S. C., in the early morning.

23d.—A violent hailstorm visited Charleston, W. Va., in the afternoon, causing great damage to foliage, fruit, etc. A severe thunder and hail storm occurred 15 miles east of Fort Jones, Cal.

24th.—Destructive thunder and hail storms were reported in Williamsburgh county, S. C., and in Bertie county, N. C.

25th.—Thunderstorms occurred in western Pennsylvania, Ohio, southern Michigan, Indiana, Kansas, and Florida. At Greensburgh, Pa., an electric light plant was struck by lightning, and one person was seriously injured. A cloudburst at Kinsman, Ohio, in the afternoon, flooded streams and washed away a dam. Six persons were reported drowned, and great damage was caused to property. A destructive hailstorm visited Jackson county, Ind. A thunderstorm, with heavy rain, high wind, and hail, occurred at Detroit, Mich., in the afternoon; one man was fatally injured by lightning. In the early morning buildings were struck by lightning at Fort Scott, Tex. A thunderstorm, with rain in a small area, visited Jupiter, Fla., at night.

26th.—Thunderstorms occurred in New Jersey, Maryland, District of Columbia, Pennsylvania, Ohio, Indiana, Tennessee, and Texas. At Bordentown, N. J., a church was struck by lightning. A house was struck by lightning at Annapolis, Md. At Washington, D. C., a thunderstorm, with hail, moving from the west began at 3.51 p. m. and continued at intervals until 4.30 p. m. Considerable damage was caused to foliage and growing crops by hail. The temperature fell from 81° to 57°. Damage was caused by hail and a house was struck by lightning at Perkaspie, Pa. A house was struck by lightning at Gallipolis, Ohio, at night, and a destructive hailstorm was reported at Canton, Ohio, in the afternoon. A severe thunder, rain, and hail storm visited Brownsville, Ind., at night; two persons were reported killed by lightning, and crops were damaged by hail. A heavy wind and hail storm passed over Lynville, Tenn; two houses were moved from their foundations, and trees were blown down. Destructive storms were reported in central Texas. A windstorm leveled trees, etc., at Soapstone Mount, N. C.

27th.—Thunderstorms occurred in New York, Pennsylvania, North Carolina, Ohio, Arkansas, South Dakota, and Texas, and destructive tornadoes were reported in Kansas. In Pittsfield, N. Y., a house was struck by lightning. A house was struck by lightning at Albany, N. Y. A heavy thunder

and hail storm visited the region about York, Pa., in the afternoon. During a thunderstorm in the afternoon damage was caused by wind at Weldon, N. C. Near Bement, Ohio, gardens were damaged by a hailstorm. A severe storm visited the region about Clark, S. Dak. Four buildings were struck and some stock was killed by lightning, and a house was blown down, injuring two persons. Large tracts of timber northwest of Texarkana, Tex., were leveled by a storm at night. A thunder and hail storm occurred about Abilene, Tex., in the morning; the temperature fell from 89° to 56°.

Destructive tornadoes occurred in the evening in south-central Kansas. The storm apparently moved eastward, traversing the distance between Attica and Kellogg, Kans., about 65 miles, in 3 hours, giving an average rate of advance of about 22 miles per hour. Two funnel-shaped clouds were observed 1 mile north of Medicine Lodge, Kans., and two formed 2½ miles northwest of that place. The first two traveled in an easterly direction, and the others are reported as having moved westerly. The storm was attended by hail and was very destructive north of Medicine Lodge. At Attica, Kans., a thunder and hail storm moved east at 6.30 p. m. At Harper all houses were reported destroyed or damaged; no fatalities in Harper, but 3 persons reported killed near that place. At Argonia a heavy wind, rain, hail, and thunder storm moved south of east at 8 p. m.

At Wellington a tornado occurred at 9.30 p. m. The storm moved north of east in a path about 200 yards in width, its arrival being preceded by heavy rain. Its passage was attended by a continuous roar of thunder and an incessant blaze of lightning. The greatest destruction was observed in the southern part of the path, and articles were thrown from south to north; 12 persons were killed, and the destruction to property was estimated at \$200,000. Two clouds were observed, one traveling from the northwest and one from the southwest. After the union a dark mass of cloud hung down and traveled with great velocity, attended by a roaring sound. When the cloud touched the ground it appeared like a mass of fire. A dead calm preceded the breaking of the storm over Wellington; the air apparently became rarefied, and breathing was difficult; the color of the lightning flashes changed from white to an intense blue; a roar was next heard, which grew louder as the storm approached. The storm struck timber 2 miles south of Kellogg, which is about 20 miles east of Wellington, and caused damage to orchards, buildings, etc., in that section. On the north side of the track the debris was thrown west, and on the south side it was thrown east. Hailstorms were reported near Dodge City, Kans., in the afternoon.

28th.—Thunderstorms occurred in New Jersey, Florida, Illinois, Missouri, and Wisconsin. During a heavy thunderstorm in the evening 2 houses in New Brunswick, N. J., were struck by lightning. Destructive thunderstorms, attended in instances by hail and violent winds, occurred in various parts of Florida. A tornado moving northeast was reported south of Olney, Ill., at 4.03 p. m. The storm had a whirling motion and the path of destruction varied from 50 to 200 yards in width. Trees in the center were broken off and appeared scorched by fire; those on the edges of the path were thrown toward the center. The damage to buildings was estimated at \$4,500, and to orchards \$2,000. Near Decatur,

Ill., a man was killed by lightning. A destructive storm moving northeast was reported near Fulton, Mo. Destructive local storms occurred at Warrenton and Marshall, Mo. At Columbia, Mo., 0.76 inch of rain fell in 10 minutes, commencing 4.40 p. m., and high wind damaged outbuildings, etc. At Lancaster, Wis., 2 persons were stunned by lightning. Destructive wind and hail storms were reported in east-central Texas.

29th.—Heavy hailstorms occurred in western Florida, southern Alabama, Tennessee, Kentucky, Missouri, and Oklahoma, and destructive local storms were reported in Kansas. At Flomaton, Ala., hail damaged vegetation. A wind and hail storm caused damage to cotton and corn about Jackson, Tenn. Buildings were twisted and trees were uprooted at Earlington, Ky., by a windstorm which was attended by heavy rain and hail. Destructive thunder and hail storms occurred at Carrollton, Mo., and Buffalo, Okla. At Columbus, Kans., a barn was struck and some stock was killed by lightning. Hail damaged wheat near Arkalon, Kans. Severe storms were reported in extreme south-central Kansas.

30th.—Local storms occurred in Virginia, South Carolina, Tennessee, Illinois, Missouri, Kansas, and Oklahoma. At Norfolk, Va., a man was killed by lightning. Several trees were struck by lightning at Charleston, S. C. A cloudburst occurred at Lynnville, Tenn., and a large area was flooded. A heavy thunderstorm occurred at night at Olney, Ill. A destructive storm visited McLeansborough, Ill.; the storm advanced from the southwest; one house and two barns were destroyed. A heavy thunderstorm visited Platte River, Conception, and Springfield, Mo. A thunderstorm, with heavy hail and excessive rain, occurred at Dodge City, Kans., in the afternoon. 0.47 inch of rain fell in 5 minutes. A tornado destructive to life and property was reported near Independence, Kans., in the evening. A destructive hailstorm occurred at Shields, Kans. A heavy thunder and hail storm occurred at night at Gate City, Okla.

31st.—Severe storms occurred in Michigan, Ohio, Indiana, Mississippi, Arkansas, Louisiana, and Texas. A thunderstorm, with high westerly winds, occurred in the afternoon at Detroit, Mich. Damage by wind, hail, and lightning was reported in various parts of the state. Lightning struck in several places in Toledo, Ohio. Heavy rain caused washouts on railroads in Indiana. In the early morning houses in Fort Smith, Ark., were unroofed by wind. Severe windstorms were reported at Liberty Hill and Coushatta, La. Destructive local storms occurred in east-central and north-central Texas. At San Angelo, a tornado moved southeast in a path 400 to 500 yards in width at 5.30 p. m., with hail and some thunder and lightning. One person was fatally injured. Debris in the path was thrown southeast. On the southwest side of the path buildings were turned and faced southwest. At Belcherville a heavy rain, thunder, and hail storm moved southeast at 4.20 p. m. Damage was confined to the south side of the storm's path; 40 to 50 buildings were destroyed, and several persons were injured. Very heavy rain fell at Forestburgh, Tex. A heavy thunderstorm from the northwest visited Palestine at night. Hail was reported southwest of that place. Near Durango a tornado moved northeast in a path about 400 yards in width at 6.30 p. m., with heavy rain, thunder, and vivid lightning. Six persons were reported killed.

INLAND NAVIGATION.

FLOODS.

The month opened with rivers above the danger-line at Paducah, Ky., Cairo, Ill., Memphis, Tenn., Vicksburg, Miss., and New Orleans, La. Heavy rains had flooded streams in eastern Kansas, northwestern Missouri, Iowa, Illinois, and Indiana. The crevasse at La Blanches on the Lafourche Bayou was reported as widening; a large body of water was escap-

ing through the break, and many plantations were being submerged. On the 2d the Ohio River fell below the danger-line at Paducah, Ky. The Mississippi River was rising slowly at Memphis and Vicksburg. During the 5th and 6th the Kansas River rose rapidly, flooding parts of the suburbs of Kansas City. On the 6th the Mississippi River rose above the danger-line at Keokuk, Iowa. On the 7th the Mississippi River was